MEMO

THUNDER TIGER CORP.
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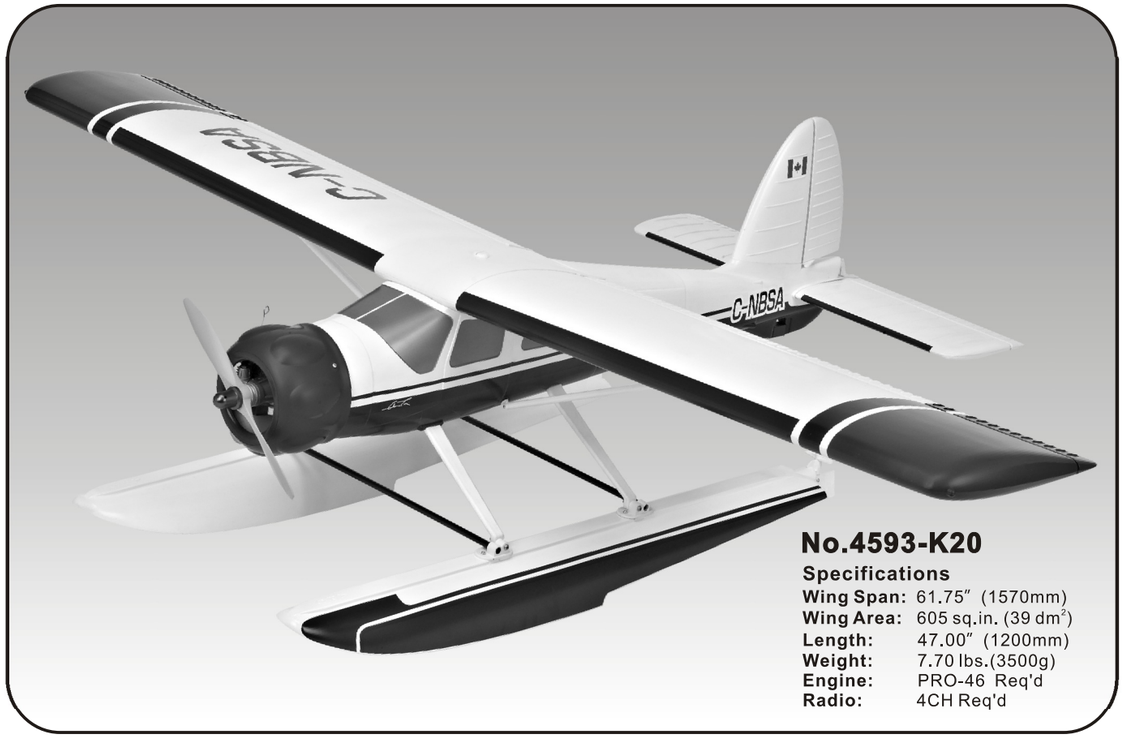
Thunder Tiger

BEAVER Idro

Assembly Manual



No.4593-K20

Specifications

Wing Span:	61.75″ (1570mm)
Wing Area:	605 sq.in. (39 dm²)
Length:	47.00″ (1200mm)
Weight:	7.70 lbs.(3500g)
Engine:	PRO-46 Req'd
Radio:	4CH Req'd

WARRANTY

This kit is guaranteed to be free from defects in material and workmanship at the date of purchase. It does not cover any damage caused by use or modification. The warranty does not extend beyond the product itself and is limited only to the original cost of the kit. By the act of building this user-assembled kit, the user accepts all resulting in liability for damage caused by the final product. If the buyer is not prepared to accept this liability, it can be returned new and unused to the place of purchase for a refund.

JE7024

INTRODUCTION

Thanks for purchasing the ABS (ABS is a “polymericed alloy” of the three materials **A**crylonitrile, **B**utadiene and **S**tyrene) series airplane from Thunder Tiger, this kind of airplane is far different from the traditional wood made airplane covered with covering. The plane is all plastic includes the fuselage, wing and tail feathers which are impact and water resistance that we ensure you will have longer enjoyable time with this product.

This is not a toy. Assembly and running this product requires adult supervision. To gain the most from this airplane kit, it is important that you read the instructions thoroughly and then follow them exactly. This instruction manual has been written with a novice modelers in mind, but includes many hints and modeling tips that even experienced modeler can benefit from. We strongly suggest that you read through the construction sequence and eliminate many questions you might have if you did not read the manual prior to starting the actual construction.

The first thing you should do before beginning assembly is to check the contents of your kit against the parts list on pages 4 and 5. If any parts are missing, contact your dealer or authorised Thunder Tiger Distributors immediately for replacement. Browse www.thundertiger.com for more information or customer service if you encounter any problems.

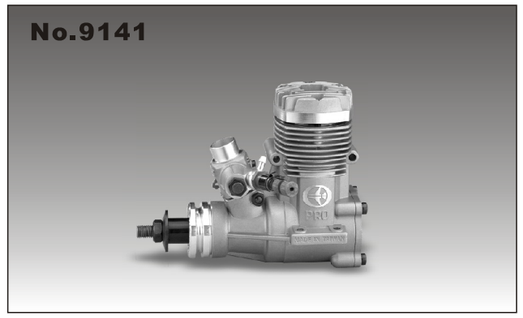
TABLE OF CONTENTS

INTRODUCTION.....2
ACCESSORIES REQUIRED.....2
OTHER ITEMS REQUIRED.....3
PARTS DRAWINGS.....4-5
PRE-ASSEMBLE NOTES.....6
WING.....6-7
FUSELAGE.....8-9
TAIL.....10
ENGINE.....11-13
RADIO.....14
FLOATS.....15-17
BALANCE.....18
REPAIR.....19

ACCESSORIES REQUIRED

A checklist is also provided on the next page which will make shopping for these items easier.

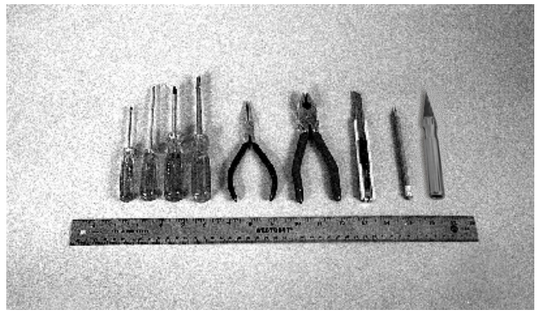
Radio - A 4- channel radio with 4 standard servos is required. Most lower priced 4-channel radios only come with three standard servos so you may need to purchase the fourth servo separately.



Engine-The Thunder Tiger PRO-46 is the ideal engine for this airplane. This quiet running engine is easy to start, requires no special break in periods, is very easy to maintain and will last for years.

OTHER ITEMS REQUIRED

Adhesives- You will need two types of adhesives for the Beaver- Epoxy and Instant (cyanoacrylate)adhesives. We recommend that you purchase both 5-minute and 30-minute epoxy to cut down on assembly time, but you can get by with only 30-minute epoxy if time is no important. You will also need a small bottle of both "Thick" and "Thin" instant adhesive.



Tools-Model assembly can be much easier if the proper tools are used. Therefore we have included in our checklist to above, a complete listing of all the tools we used to assemble our prototype models. As you will notice, many household tools can be utilized during construction.

No.1263-65

Carry Master-Thunder Tiger offer a complete organizer of field equipment. All you need is included.

Flight Equipment- There are several “support” items that you will need to purchase in order to get your engine running and your plane in the air. These are listed at the bottom.

Flight Equipment Needed Check List

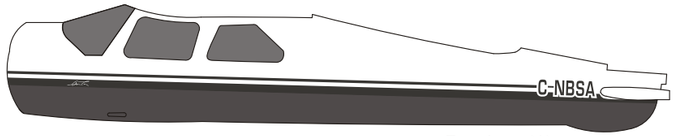
- Foam Rubber Padding for the radio
- Stick on Lead Strip for balancing the plane
- 10%-15% Glow Fuel
- Fuel Pump or Bulb
- Electric Starter or “ Chicken Stick”
- Glow starter
- Extra Glow Plug(s)
- Silicon Tubing

Comprehensive Items Needed Check List

- 4-Channel Radio with 4 Standard Servos
- 5-Minute Epoxy (4 ounces or so)
- 30-Minute Epoxy (4 ounces or so)
- “Thin” Instant Adhesive (1/2 ounce)
- “Thick” Instant Adhesive (1/2 ounce)
- Hobby Knife and Blades
- Epoxy Mixing Sticks
- Sandpaper (150 grit)
- Masking Tape
- Rubbing Alcohol, Paper Towels
- 90 Degree Triangle, Ruler
- Fine-Point, Felt-Tip Pen
- Misc. Household Tools
- Drill and Bits 2mm, 2.6mm, 3mm, 4mm, 4.8mm, 5mm, 7.5mm(5/64”, 3/32”, 1/8”, 5/32”, 3/16”, 13/64”, 19/64”)

AS6723 Fuselage Set

Cowl (1)

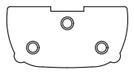


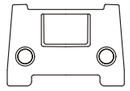
Fuselage (1)

3x15mm Wood Screw (3)

Nut Support (1)

Firewall (1)


Undercarriage Bulkhead (1)

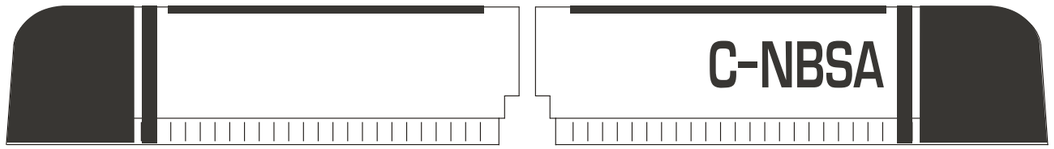

Centre Bulkhead (1)

Servo Tray (1)

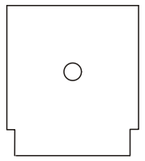
Cowl Mount (3)

Spacer (3)

AS6724 Main Wing Set



Main Wing (L/1,R/1)


Center Sleeve (1)

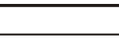
Spacer Tube (1)

Aileron End Cap (L/1,R/1)

Aileron Servo Rail B (1)

Rod Support (L/1,R/1)

Aileron Servo Rail A (1)


Torque Rod (L/1,R/1)

2.3x12mm Wood Screw (4)

3x10mm Wood Screw (4)

M7 Hex Nut (1)

Strut (2)

Strut Mount A (2)

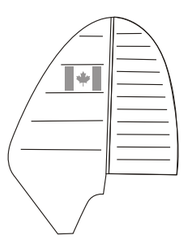
Strut Mount B (2)

Strut End (4)

AS6697 Wing Bolt (Sold in Pair)

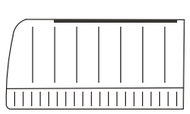
Wing Bolt (1)

AS6725 Vertical Tail Set


Rudder (1)

Rudder Control Horn (1)

AS6726 Horizontal Tail Set


Horizontal Tail (2)

Elevator Control Horn (1)

Foam Block (1)

Elevator Spar (1)

AS6672 Engine Mount Set

Engine Mount (1)

Engine Mount Back Plate(1)

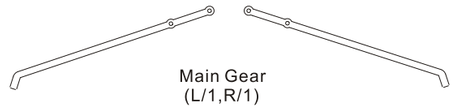
Beam Hold Block(1)

M4 Hex Nut (3)

4x25mm Screw (3)

3x18mm Wood Screw (4)

AS6686 Main Landing Gear Set


Main Gear (L/1,R/1)

4X30mm Socket Screw (1)

4X35mm Screw (2)

M4 Locknut (2)

Hex Wrench (1)

M4 Nut (5)

M4 Cone (3)

AS6696 Linkage Set

Wire 2M (1)

Threaded End W / Hole (2)

Z-Bend End W / Hole (2)

Brass Tube (4)

CFK Pushrod (1)

Threaded Adaptor (2)

Clevis (6)

Throttle Guide Tube (1)

Aileron Pushrod (2)

Throttle Pushrod (1)

3169 EZ Connector Set

Hex Wrench (1)

3x3mm Setscrew (1)

Pushrod Retainer (1)

M2 Nut (1)

M2 Washer (1)

AS6678 220cc Fuel Tank

Cap (1)

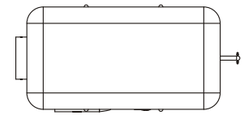
Fuel Back Plate (1)

Rubber Stopper (1)

Bent Brass Tube (2)

3x20mm Self -tapping Screw (1)

Silicon Tube (1)


Fuel Tank (1)

Silicon Ring (1)

Brass Tube (1)

Clunk (1)

AS6711 Mounting Bracket Set

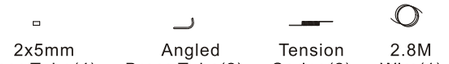
Mounting Bracket (L/2, R/2)

3x15mm Wood Screw(9)

Plastic Sleeve(9)

Brass Tube Mount(1)

AS6712 Pull-Pull System


2x5mm Brass Tube(4)

Angled Brass Tube(2)

Tension Spring(2)

2.8M Wire(1)

AS6680 Repair Bag

ABS Sheet(2)

CA Glue(1)

Epoxy(1)

AS6675 Screw Driver

Screw Driver (1)

AS6713 Carbon Tube

Carbon Tube (2)

AS6710 Water Rudder Set

Plug(1)

Plug w/Rudder Bush (1)

Steering Arm(1)

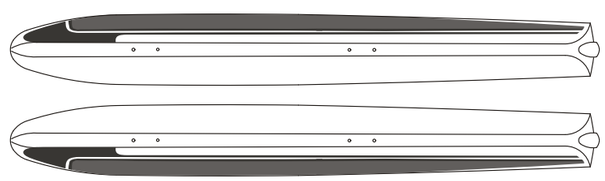
2.9x13mm Rivet(1)

2.6x8mm Wood Screw(1)

Rudder Shaft(1)

Water Rudder(1)

AS6727 Floats Set


Floats (R/1, L/1)

AS6715 Brace Set

Brace (L/1, R/1)

Brace Mount (1)

4mm Locknut(5)

4x20mm Socket Head Screw (1)

4mm Nut (2)

4x25mm Round-head Screw (4)

4x35mm Socket Head Screw (2)

OPTIONAL PARTS

AA1831 Al. Prop Nut
AA1831R Al. Prop Nut(Red)

Prop Nut (1)

PRE-ASSEMBLY NOTES

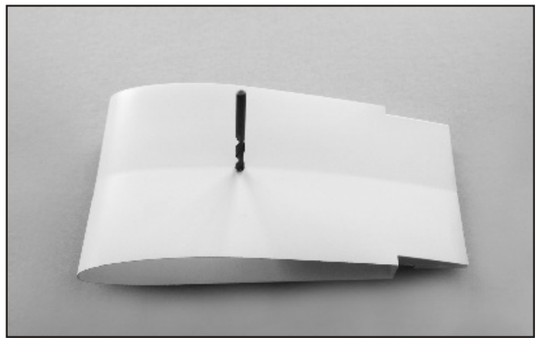
1. If you are not an experienced pilot, plan to have a fully competent pilot check your completed model and help you with your first flights. Even though we have tried to provide you with a very thorough instruction manual, models are rather complicated and an experienced modeler can quickly check over your model to make sure your first flights are successful.

2. Please assemble your model exactly according to these instructions. Do not attempt to modify or change the **Beaver Idro** in any way as doing so may adversely change its flying characteristics.

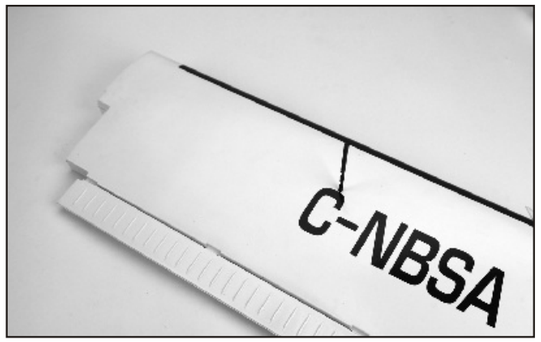
3. Before you begin, please check the entire contents of this kit against the parts drawing to make sure that no parts are missing or damaged. This will also help you tobecome familiar with each component of your plane. If you find that any of the parts are either missing or damaged, please contact your dealer immediately for replacement.

Note: Your dealer cannot accept kits for return if construction has begun.

4. Trial fit each part before gluing them in place. Make sure you are using the correct part and that it fits well before assembling. No amount of glue can make up for a poor fitting part.

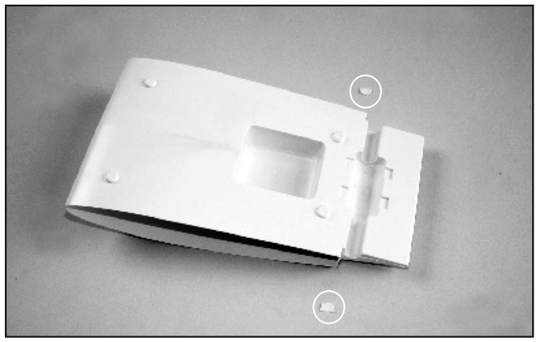


2.Use a sharp knife or a round file to remove the moulding flash from the wing joiner. Drill a 7.5mm(19/64") diameter hole through the moulded dots on both the top and bottom of the wing joiner.

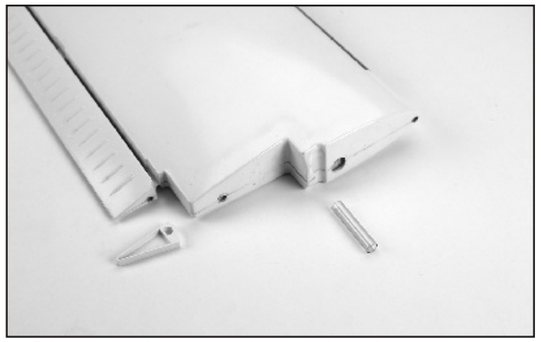


3.Drill 4.8mm(3/16") hole at the bottom wing surface for the strut mount. Note drill 30mm(1-3/16") only and be careful do not drill through the wing.

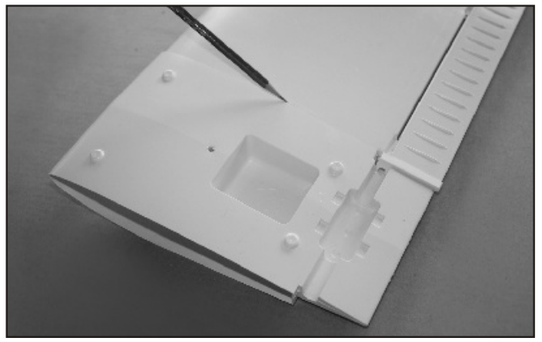
WING ASSEMBLY



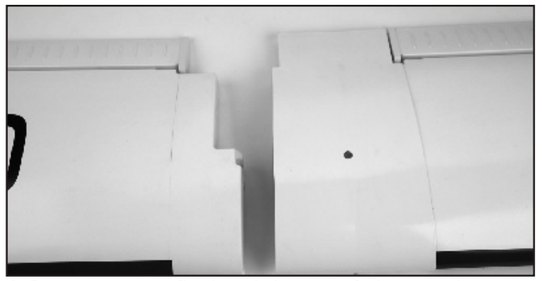
1.Cut the two small plastic half circles away as shown in the photo.



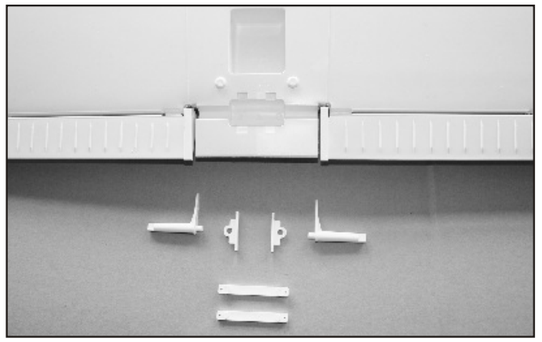
4.CA the aileron end cap in place, note the orientation. The mark PS is for left aileron and PD is for right side. Next CA the Spacer Tube in the wing root, make sure it is centered accurately in the depth of the wing.



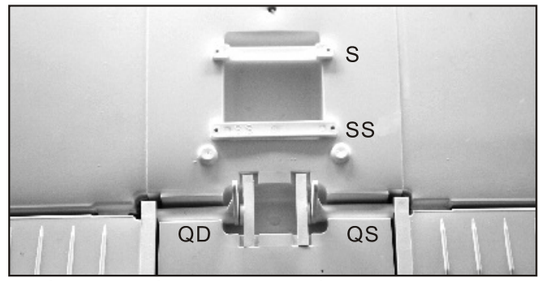
5.Slide the wing joiner all the way in on the left wing panel and check the fit of the joiner onto the panel and the spacer tube is aligned accurately with the holes in the wing joiner. Trim the spacer tube is required to get a perfect fit.



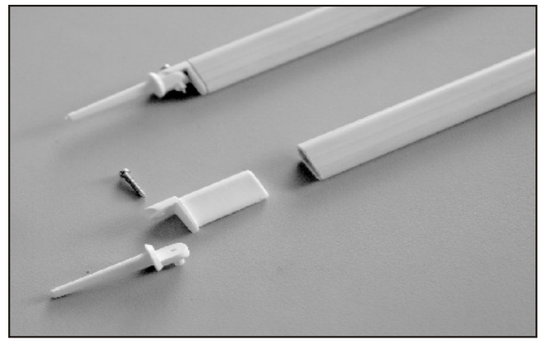
6.Same way to fit the right panel then make sure the gap between the aileron end cap and wing joiner is around 2mm(5/64") both at two wing panels. When satisfied use a pencil to draw along the edge of the wing joiner on the wing panels. Remove the wing joiner from the panel and lightly sand the wing panels within the pencil lines to get better adhesion with the glue. Also lightly sand the inside of the wing joiner.



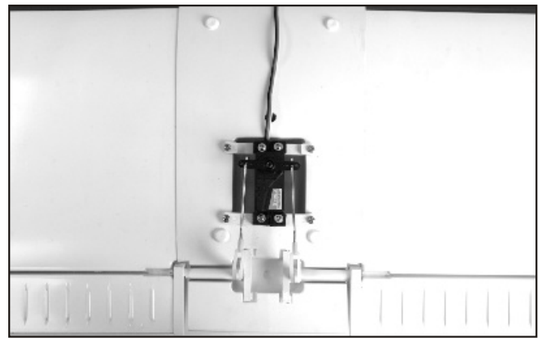
7.Spread a layer of epoxy on the wing root and panel within the epoxy working time then join two wing halves together and fit to the lines you drew. Clean the excess epoxy before it cured. Locate the aileron linkage parts and servo rails as shown.



8.Glue the aileron servo rails S and SS on the servo well. Note: keep the SS rail at the bottom side as shown. Use the aileron servo that you are going to use as the guide to decide the rail position then secure the rails with 3x10mm wood screws. Install the aileron torque rods (QS for left and QD for right) and glue the aileron support in position as shown. Make sure ailerons move free then CA the QS, QD to the aileron end cap.

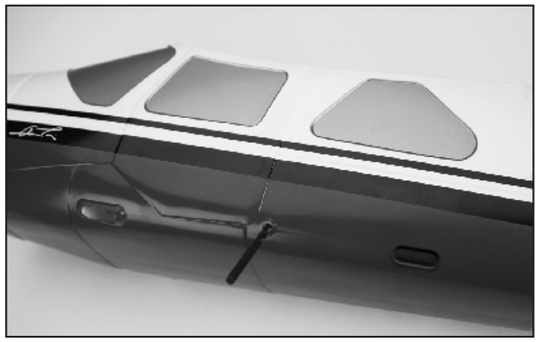


9.Locate the strut, strut mount B and strut ends as shown. Trial fit the strut ends in the strut, it may need to trim to fit in. Next glue the strut end in place with CA and secure the strut mount B with 2.3x12mm screws.



10.Assemble the aileron pushrods by threading the clevises onto aileron pushrods then insert the "Z"bend end of the pushrods into the holes of the torque rods. Adjust the clevis and snap the clevis onto the aileron servo arm as shown. Temporally fit the strut on the bottom wing but do not glue at this moment until final assembly. This is to make sure the angle is correct to the fuselage.

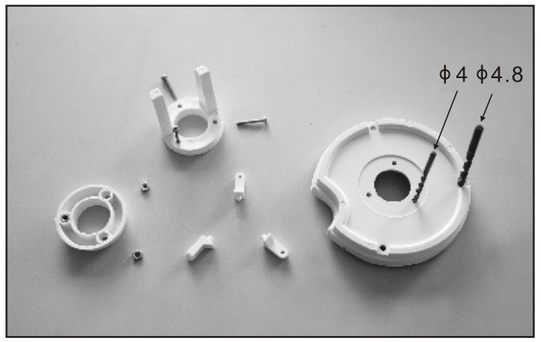
FUSELAGE ASSEMBLY



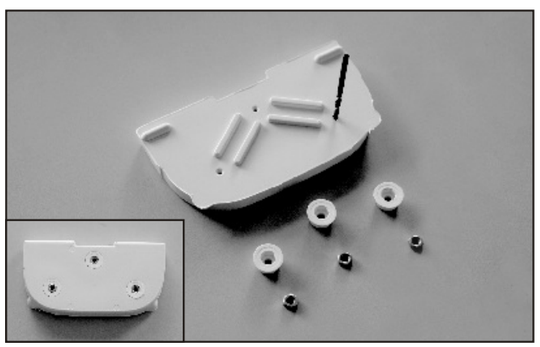
1.Drill 4.8mm(3/16”) holes through the moulded dot in the fuselage sides as shown.

4.Slightly sand the glue area of the undercarriage bulkhead then trial fit it into the fuselage as shown. Make sure that it is correctly positioned with the small moulded ears fitting into the front of the cutouts for the undercarriage legs. Glue the bulkhead in place when position is satisfied. Press the fuselage sides to contact with the bulkhead until the glue has cured.

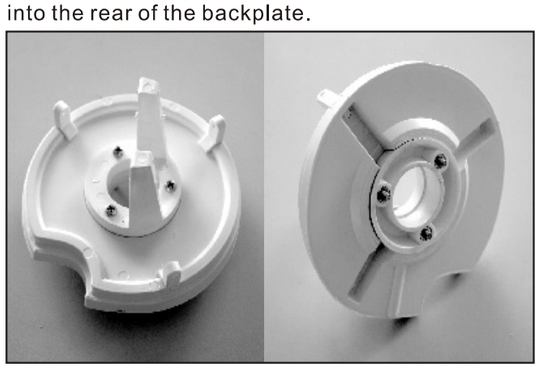
2.Drill 2mm(5/64”) holes through the fuselage at the cable exit points as shown.



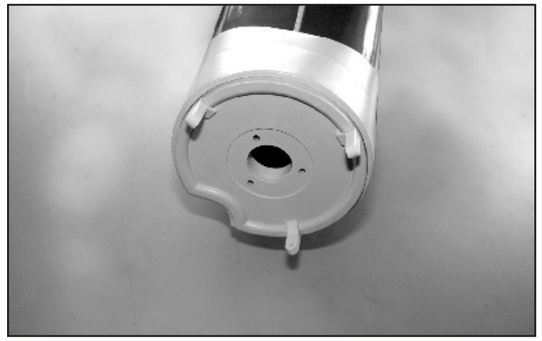
5.Locate the firewall, engine mount, backplate, cowl mount, 4x25mm screws and M4 nuts as shown. Drill 4mm(5/32”) holes through the three marked dots in the centre of the firewall and drill 4.8mm(3/16”) holes through the firewall for the outer three holes as shown. Press three M4 nuts into the rear of the backplate.



3.Drill 4mm(5/32”) holes through the undercarriage bulkhead where marked. Next glue the cone into the place in the undercarriage bulkhead as shown, then press M4 nuts into the cone.

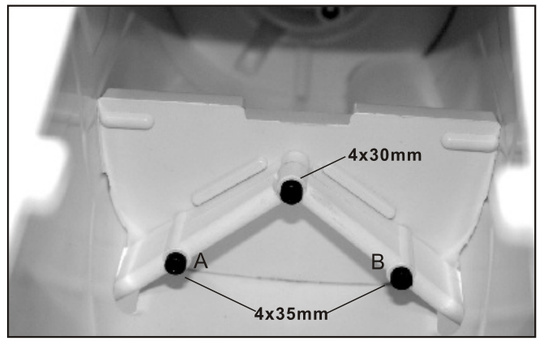


6.Temporarily secure the engine mount to the firewall with 4x25mm screws as shown. CA the backplate in the rear of the firewall. Glue the three cowl mounts in place on the firewall as shown. Remove the engine mount from the firewall.

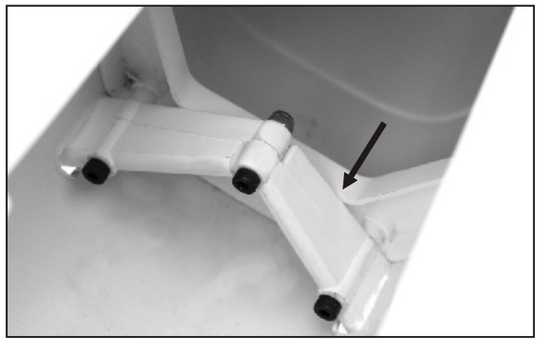


7.Roughen the glue area of firewall and fuselage with sandpaper, spread a generous coat of epoxy on the inside front of the fuselage then pass the firewall into the fuselage from the opening at the middle fuselage and slide it forward into the place in the front of the fuselage. Remove any excess epoxy with alcohol.

10. Locate the brace mount and two M4 nuts, press the nuts into the mount. Trail fit the mount inside the fuselage, it requires to roughen the glue area of the brace mount and fuselage.

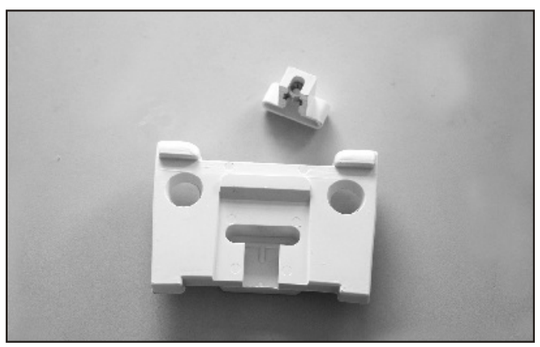


8.Insert the main landing gear through the fuselage sides, and screw into place in the rear of the undercarriage bulkhead, using one 4x30mm and two 4x35mm socket head screws.



11. Fit the brace mount in place and trial fit the landing gear braces to make sure the braces can contact the brace mount as shown. CA the brace mount in place. Firmly secure the landing gear brace with two 4x35mm, one 4x20mm socket head screws and one M4 locknut.

9. Locate the molded landing gear brace mark at two sides of fuselage then trim away as shown.

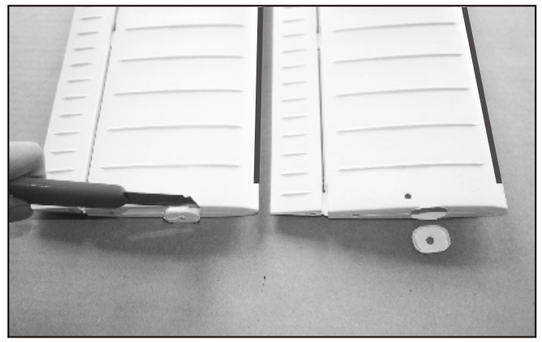


12.Remove any flashing from the centre bulkhead then press an M7 nut into the nut support. Carefully CA the support into the place in the centre bulkhead.

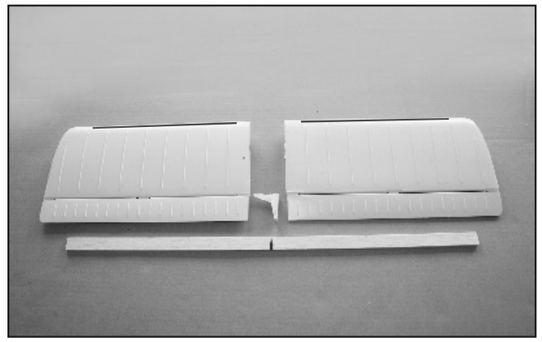
13.Insert the centre bulkhead into the fuselage and slide into position where the two moulded tabs at the top of the bulkhead fit into the moulded recesses in the wing mounting. The rear of the bulkhead should line up with the inside rear of the front doors. CA the centre bulkhead into position when satisfied.

14.Check the fit of the servos being used in the tray. It requires to trim if standard servos are used. Fit the tray into position with the front of the tray fitting snugly into position where contact the centre bulkhead and the bottom of the tray resting on the moulded flange line under the rear windows. Glue the tray in place when satisfied. You may need to press the fuselage sides to contract the tray before the glue cures.

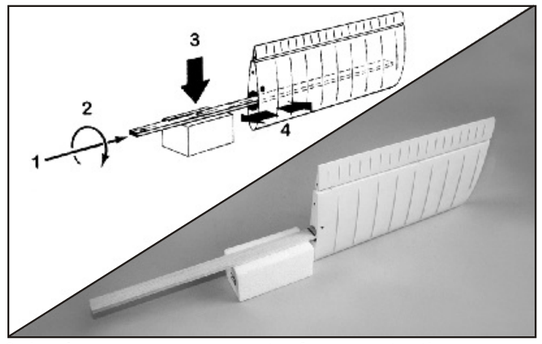
TAIL ASSEMBLY



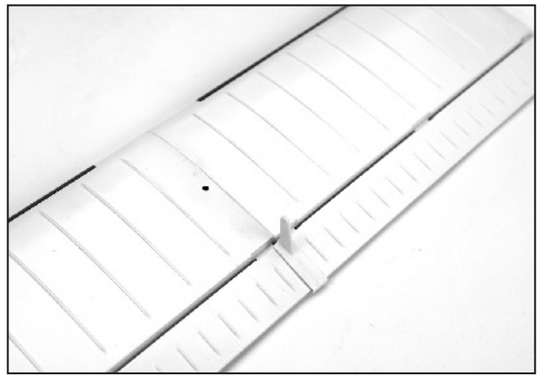
1.Carefully cut away the moulded cap at the root of the two tail halves. Trim away any flashing until the tail root is smooth that they will join later.



2.Make mark at the centre of the tail spar as shown.

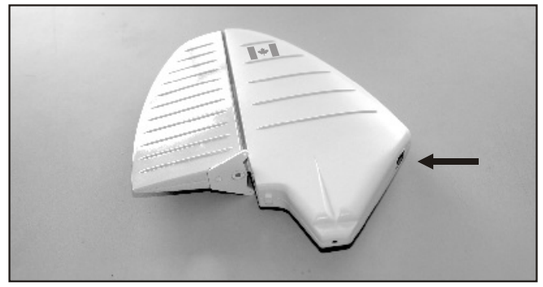


3.Apply a generous coat of epoxy to the narrow edges of the spar on one side only of the marked halfway point. Hold the spar horizontally so the epoxied edges face to the leading and trailing edges of tail, then insert it inside one of the tail up to the marked point(step 1) then carefully rotate the spar (step 2). Place the tail half leading edge down on a flat surface and support the extended part of the spar level with the foam block(step 3). Move it back and forth for about 5mm two or three times to even distribute the epoxy(step 4).

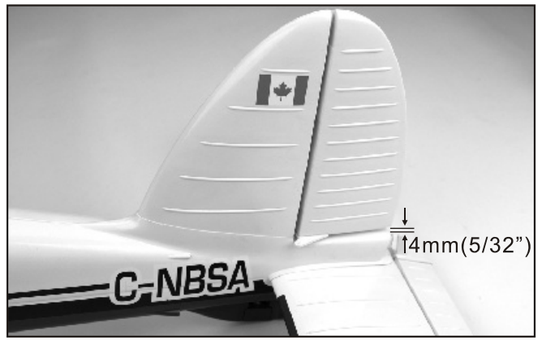


4.When the epoxy has cured, repeat the operation with the other tail half with the addition of more epoxy on the roots of the tail to glue two halves together. You may use mask tape to hold two halves together until it cures. Make sure two halves are aligned accurately. CA the elevator control horn in place firmly.

5.Temporarily attach the wing to the fuselage and secured with the wing bolt. Trail fit the tail in place and check alignment with the wing and fuselage. The tail should be parallel to the wing when looking forward from the rear and top of the model. Make mark on the tail along with the fuselage when satisfied. Remove the tail and slightly sand the glue area then CA the tail in place. Next trim away any flashing of the rear fuselage as indicated.

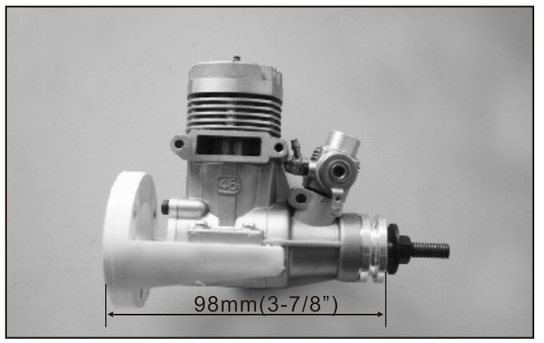


6.Carefully cut away the rectangular moulded caps from the vertical fin as indicated. Remove any flashing then CA the rudder control horn in place as shown.

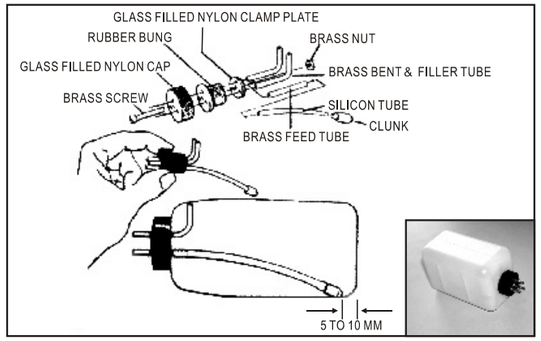


7.Install and adjust the vertical fin in the fuselage until there is a gap around 4mm(5/32") between the bottom of the rudder and the top of the fuselage. CA the vertical fin in place when satisfied with the position and make sure it is perpendicular to the horizontal tail.

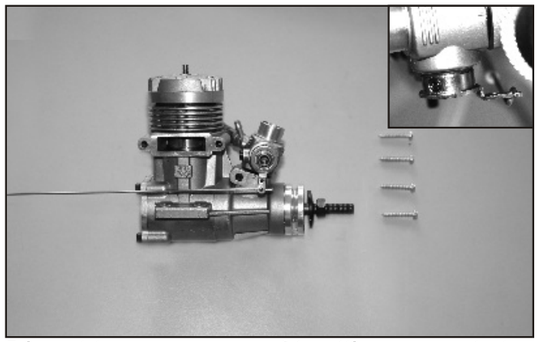
ENGINE INSTALLATION



1.Place the engine on the engine mount, make marks on two beams for the mounting holes where drive washer of the engine is 98mm(3-7/8") to the engine mount as indicated. Drill 2.6mm(3/32") holes on the marks you made. Now you can firmly secure the engine mount on the firewall.

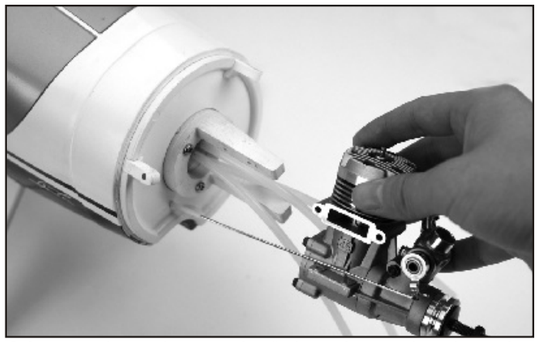


2.Assemble the tank as figure; install the silicon rubber ring on the tank and insert the tank in the opening of the firewall. CA the tank flange on the undercarriage. Please refer to photo in Step 4.

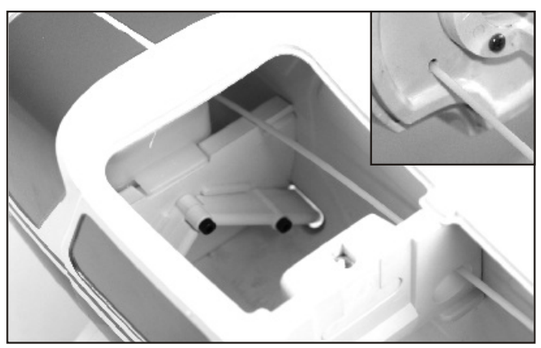


5.Insert the Z-bend end of throttle pushrod to the engine throttle lever as shown.

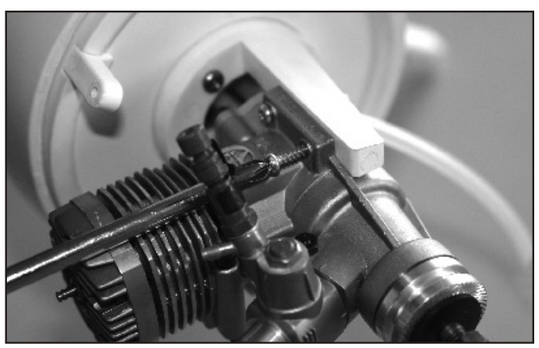
3.Drill a 3mm(1/8") hole for throttle pushrod guide tube as indicated position. Thread the fuel tubes to the fuel tank, leave enough length for each tube.



6.Insert the other end of throttle pushrod to the guide tube.

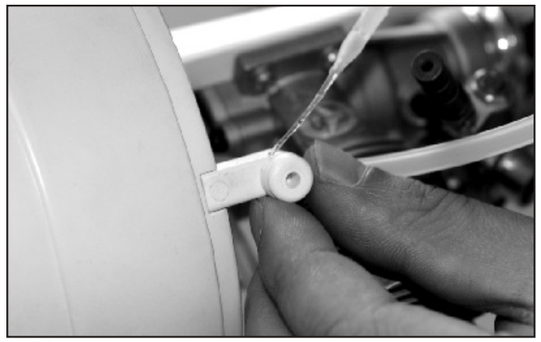


4.Insert the guide tube from firewall through the fuselage to the servo compartment. Leave about 15mm out of the firewall then CA the guide tube in place.

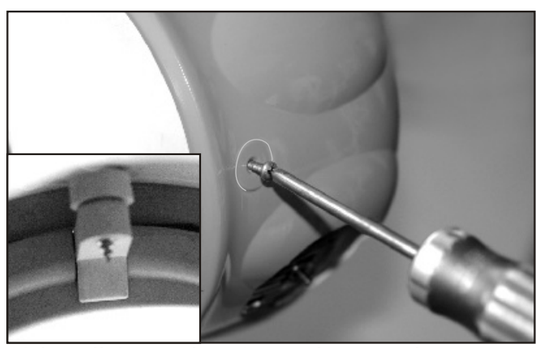


7.Firmly secure the engine on engine mount with four 3x18mm wood screws.

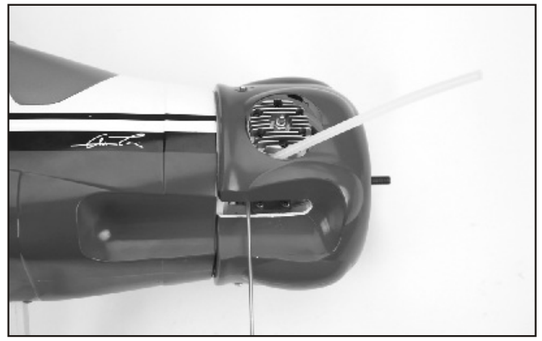
8.Drill 3mm(1/8") holes through the three dots on the cowling as shown. Locate the ring but do not glue at this moment.



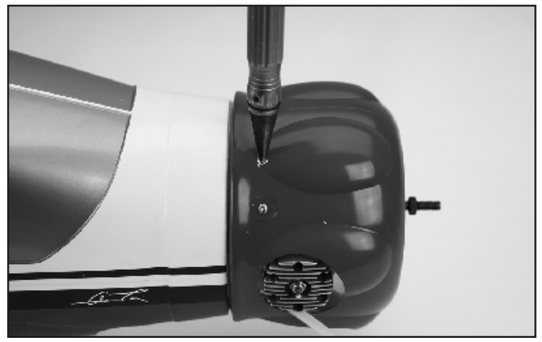
9.Glue the three spacers in place on the cowl mount with CA. Make sure they are accurately aligned with the holes.



10.Install the cowl on the cowl mount. It may need to bend a little bit so cowl could place in right position that the holes are just aligned with three spacers. Secure the cowl with three 3x15mm wood screws.

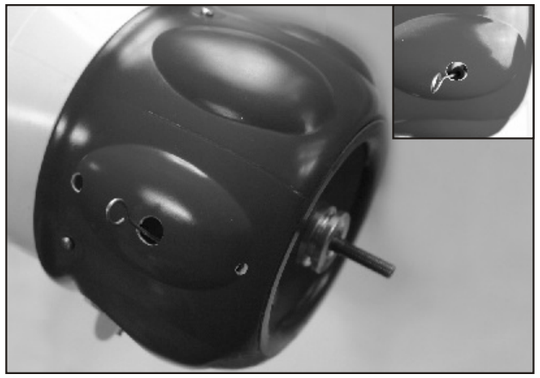


11.Check the fit of the cowl on the fuselage then use the engine and silencer to mark and cut the cowl as shown to allow the muffler can go inside the cowl. Carefully trim the cowl little by little as cowl is very stiff and avoid removing too much material from the cowl. Next use a long Phillips screw driver or wire go through the engine muffler hole and push to make a mark that you can see from the outside of the cowl.



12.Use reamer to enlarge the hole up to 5mm. Same way to the other hole. If user use PRO-46 then we suggest to enlarger the front hole up to 10mm(25/64") as needle valve will go inside from this hole.

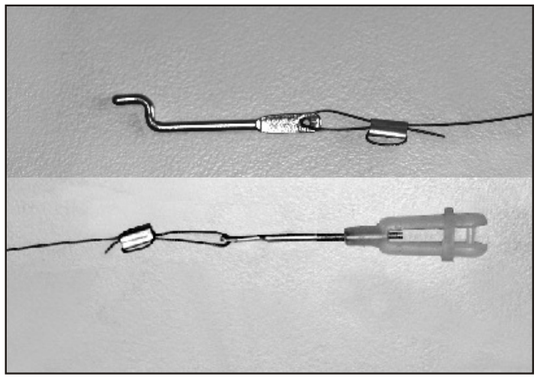
13.Secure the muffler with the socket screws which come with the engine. Properly connect the fuel line to the muffler and carburetor.



14.Install the needle valve, you will need to use a steel wire and secure it on the back of needle valve with setscrew, you may need to drill a hole as shown to thread the setscrew. Bend the other end of wire to be L shape or O shape, this will be easy to adjust the needle.

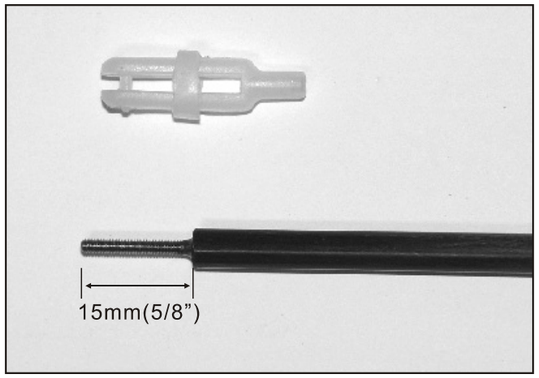
15.For smooth running of the engine, it requires to trim the ring/cowl for the vent of carburetor or engine will not run smoothy. Install the propeller with the prop nut which comes with the engine. We suggest to use the scale aluminum spinner hub which is available from hobby shop.

RADIO INSTALLATION

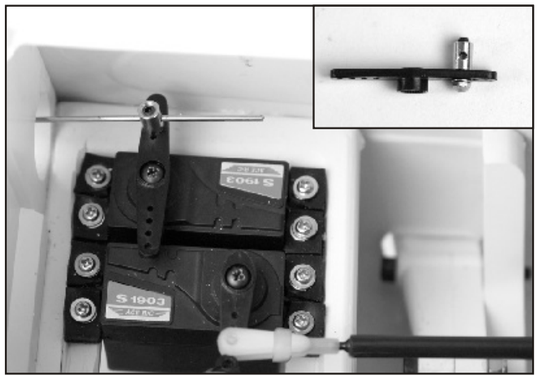


1.Cut the cable into two pieces. Thread the cable from the hole at tail through the fuselage to the servo tray. Use a piece of tape to fix the cable on the fuselage from loosening. Now loop the Z-Bend end first (thread the brass tube first, next thread the Z-bend , go back to the brass tube again. Adjust the distance between the Z-bend end and the tube then thread the cable through the brass tube again and make a circle as small as possible. Clamp the brass tube with pliers to lock the cable from loosening. Insert the Z-bend end in the holes next to the outmost holes on the rudder servo horn. Make sure the two cables are cross each other. Refer to the photo in Step 9 of FLOATS ASSEMBLY.

2.Locate the threaded end w/hole, thread it into the clevis at least 6mm then loop the other end of cable as you did on Z-bend end. Snap on the clevis to the rudder control horn then adjust the tension and make the circle as small as possible. Make sure both cables are equal and the brass tube will not contact the exit hole when servo works. Once satisfied, clamp the brass tube. You can adjust the tension by threading the clevis.



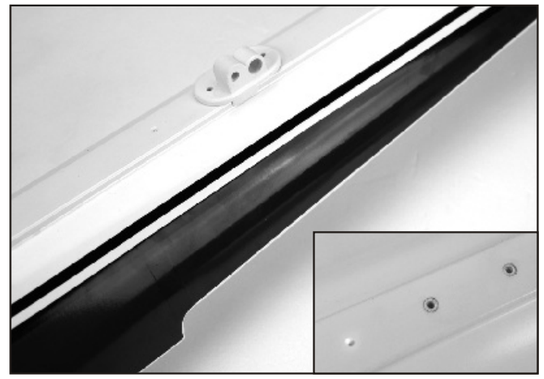
3.Trim the CFK pushrod in length of 560mm(22"), next locate the threaded adaptor slightly sand the glue area of adaptor to make sure there is no oil on it. Apply enough epoxy to glue the adaptors in the CFK pushrod at two ends as shown. Thread the clevises on the adaptor after epoxy has cured. Apply a silicon ring to the clevis.



4.Thread the CFK pushrod through the fuselage and snap on the elevator control horn. Adjust the silicon ring to keep clevis from loosing. Snap the other end of pushrod to the servo horn when elevator and servo are both in neutral position. Adjust the clevis if necessary. Make sure elevator pushrod works smoothly and servo horn has enough clearance to each other.

Note: the silicon ring threaded on the clevis should not interfere with the servo horn when it works.
Next Install the EZ connector on the servo horn then thread the pushrod through the connector then secure the servo horn on the servo. Adjust the pushrod when they are in neutral position secure the pushrod with 3x3mm setscrew when satisfied.

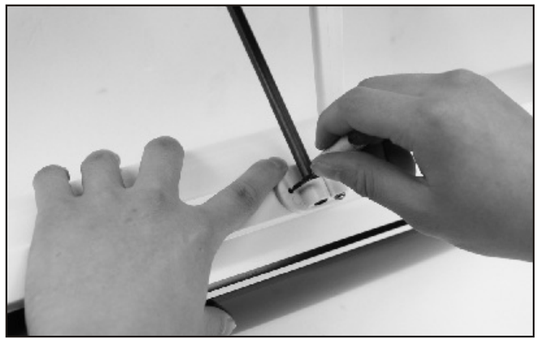
FLOATS ASSEMBLY



1. Place the Mounting Bracket on the rear last dot, aim the first hole of mounting bracket to the last dot. Use mounting bracket to make mark then drill 5mm holes on the dot and mark you made at least 30mm(1-3/16") deep.

Note: disregard the front dots as they are not for Beaver Idro, the position of front mounting bracket will be decided in step3. Trial fit the plastic sleeve and make sure the depth is just good for the sleeve, remove the sleeve and roughen the plastic sleeves with sandpaper(100 grit). Glue four sleeves in place with epoxy. Note that the holes face up and should be flush with the surface. Make sure the holes of sleeves do not have any epoxy.

2.Locate four Mounting Bracket(Left/2, Right/2) and Carbon Tube, note the orientation of each mounting bracket then secure the bracket on the brace with 4x25mm screws and M4 locknuts. Insert the carbon tube on bracket, adjust the bracket to even with the end of carbon tube so floats will parallel to each other. Do not glue the carbon tube at this moment until step 3.

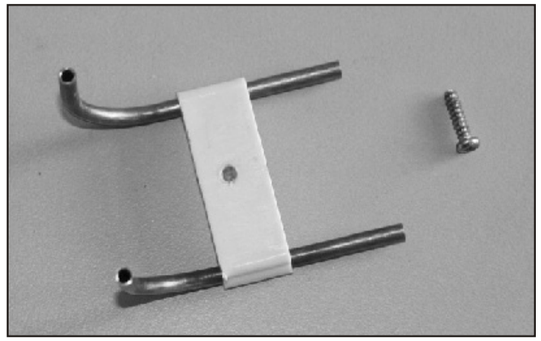


3.Temporally secure the brackets on the float at the sleeves you just installed. Make sure two floats are parallel with each other then decide the front bracket position. Make marks and drill the holes as you did for the rear dots on float, then install the sleeves as same as step 1. Next secure bracket on the float with 3x15mm wood screws after epoxy has cured. Do not over securing the screw as it may strip the plastic sleeve.

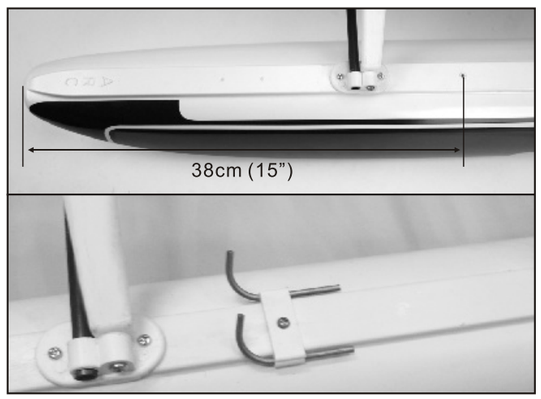
4. Sand the glue area of the plug and hole on the float, next epoxy the plugs in place. Note the plug w/Rudder Bush will be at left float.

5. Locate the Water Rudder, Rudder Shaft and Rivet. Insert the rivet then use hammer to secure the rudder in place. Note: The rivet has a hole on one end, suggest to place a Phillips Screw driver on the hole then slightly hit the driver so the rivet will break evenly. Next hit the rivet directly until water rudder is secured firmly but still can swivel back freely.

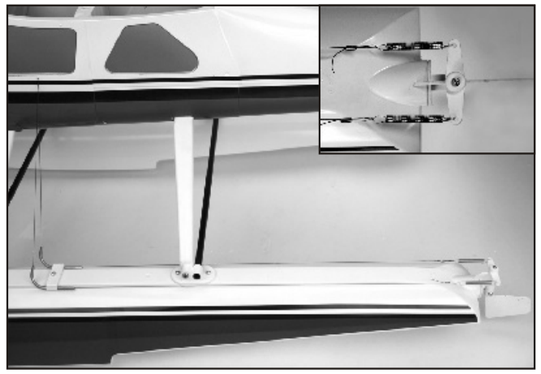
6. Install the water rudder in the plug w/bush then secure the Steering Arm in place with 2.6x8mm wood screw.

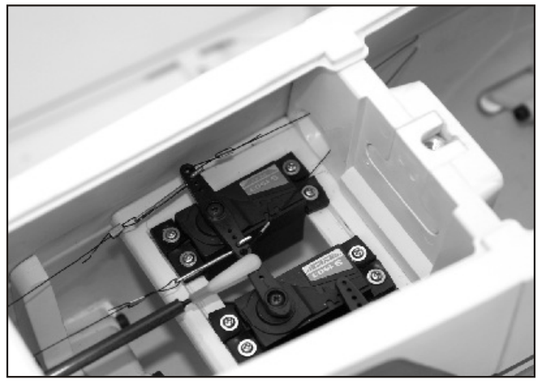


7. Locate the Angled Brass Tubes and mount, install the tubes in the mount as shown.

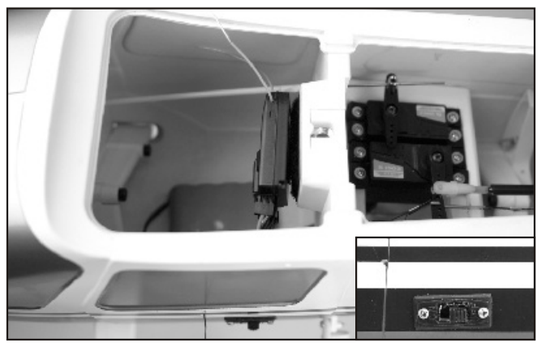


8. Place the Brass Tube Mount as indicated position then make mark and drill 5mm hole. Do the same procedure to install the sleeve. Next secure the brass tube mount on the float with the rest 3x15mm wood screw.

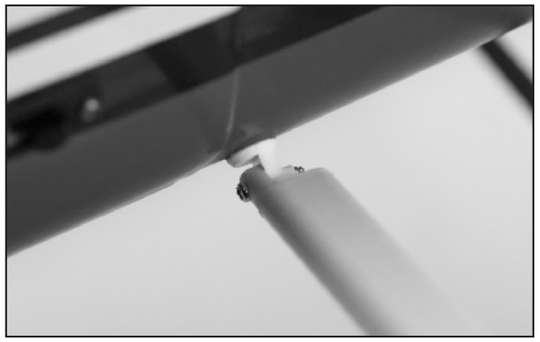




9.Drill two small holes around 2mm at the left side of the fuselage as shown. Thread the wire through the angled brass tube on the float, make a loop and circle on the tension spring, and install the tension spring on the steering arm as shown. Next thread the small hole to the servo compartment. Same way to make a loop and circle to the servo horn at outmost hole. Do the same way on the other wire.



10.Properly connect all the servo wires then use velcro to secure the receiver on the bulkhead, same way to secure the battery on the bottom of the fuselage as shown. Install the switch at the left side to keep away from the exhaust oil.

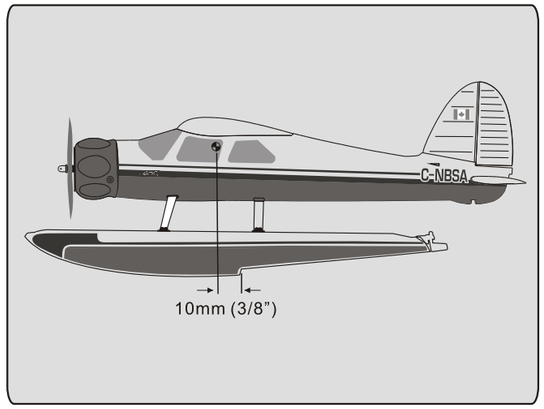


11.Secure the wing in place with the wing bolts. Insert the strut end to the strut then place on the fuselage and bottom wing. Adjust the strut angle or length if necessary. CA the strut mount A onto the fuselage; epoxy the strut mount B onto bottom wing Secure the strut with 2.3x12mm wood screws. The struts are for scale appearance, if user need to remove the wing often then you may not need to glue the strut end on the strut for easy removing the wing. If strut requires to be functional then you will need to glue the strut end to the strut.

Congratulations, the Beaver Idro is done now you will have to be carefully to do the balance and control throw check.

BALANCE

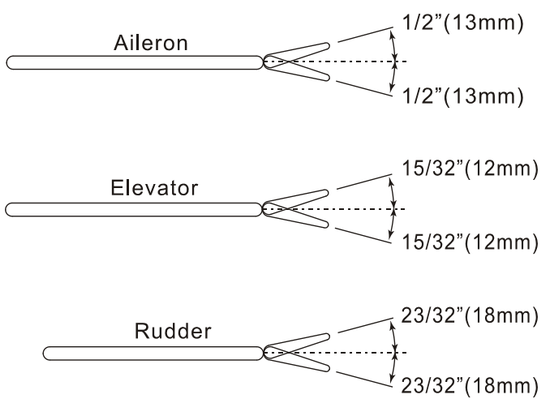
Step vs C.G.



Double check the balance point of your plane, refer to the plane manual and make sure the C.G. position is correct. To obtain this position first try moving the receiver battery and then if needed, add some lead. The step should be about 10mm (3/8")after the C.G. Position.

CONTROL THROWS

Make sure the direction of servo moves correctly. If not switch the reversing switch on the transmitter. If the control surface does not move far enough, either move the pushrod out farther on the servo horn or move the clevis in farther on the control horn. If the control surface moves too much, either move the pushrod in on the servo horn or move the clevis out farther on the control horn. Adjust the control throws as the initial setting as follows:

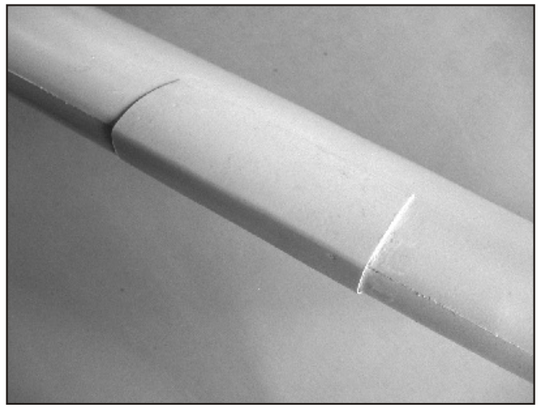


After adjusting all the control throws, thread on the silicon ring in place to hold the clevis from loosening when in flight.

FLYING TIPS

During the slow taxing phase it is essential to hold in full up-elevator to keep the nose up. Taxi as slowly as possible to avoid spraying and splashing. Use the rudder (i.e. the water rudder) for course correction only; the ailerons should only be used to hold the model straight in a side-wind. Take-off must always be directly into wind; start by opening the throttle slowly with full up-elevator held in. As soon as the model rises 〃 onto the step 〃 , i.e. when it is gliding on the underside of the floats, the elevator must be returned to neutral. Allow plenty of time, i.e. more than you generally use on land. The drag of floats is much higher than of a wheeled undercarriage. Always land in plenty of time, i.e. well before you run out of fuel, as you will need a longer motor run than you are used to when flying from land in order to taxi the model back to the bank. For the landing fly into wind as usual and flare the model with a higher angle of attack than usual. The waves can be uncomfortably high, and the model will tend to bounce unless you are very careful.

REPAIR



This kind of airplane is far different from the traditional wood made airplane covered with covering, it is all plastic includes the fuselage, wing and tail feathers. Enclosed in the kit, there is a repair bag includes a super glue, epoxy and ABS sheets. Use the furnish materials to repair your plane if there is any damaged. Cut a proper size of ABS sheet for the crack area as a patch, sand the glue area with 300-400 grit sand paper first, this will enhance the adhesion. Patch the crack area or anywhere need to be reinforced with super glue. Use epoxy instead of super glue if contacts any foam inside the wing. Check Thunder Tiger authorized distributors for customer service or tech support if any problem is encountered.

SAFETY TIPS

1. Nylon or fiberglass propeller is recommended.
   Also check that there is sufficient clearance between the propeller tips and the top surface of the floats.
2. Only fly when engine is powerful and smoothly.
3. Do not fly on a flowing water like creeks or rivers.
4. Do not attempt to fly if there is any wildlife or people in the water.
5. Check the wind direction then choose a good location for flying. The wind can carry it back to the shore if engine is quit.
6. If plane is stuck out on the water, do not attempt to swing to get it back as it is very dangerous and difficult. A good way to get your plane back, retrieve the stalled or capsized model plane with a fishing rod that equips a real. Tie a tennis ball on at least 12 lb. string. Of course, retrieve the plane with a boat is the best.

Cessna® 177 Cardinal

Specifications:

Wing Span:	67.00" (1700mm)
Wing Area:	682 sq.in. (44 dm^2)
Length:	49.20" (1250mm)
Weight:	8.15 lbs.(3700g)

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